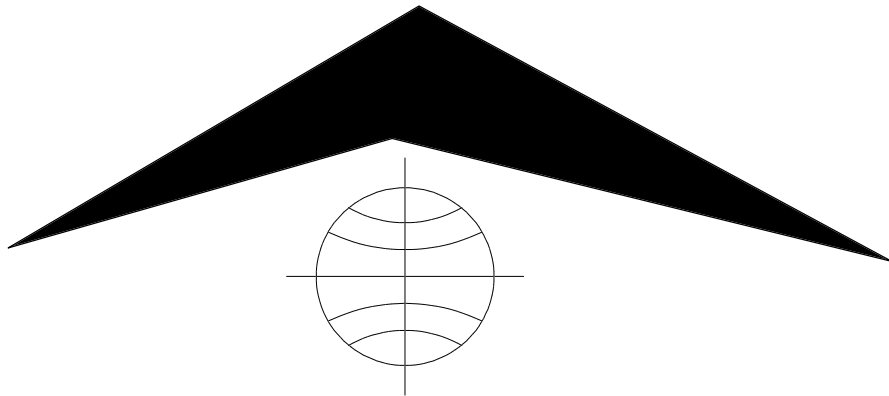


4EMD-1000 INDUCTION PROBE CALIBRATION COIL



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General Information

Overview

The 4EMD-1000, calibration coil has been designed to give the user a means to calibrate the 2EMA, 2PIA and 4 conductor style induction tools offered by Mount Sopris. The coil has three different calibration ranges, corresponding to the measurement scales offered by the induction tool. The calibration coil is made of light weight materials and is easily assembled in the field.

Controls, Connectors, and Layout

Controls for the 4EMD-1000 consist of a rotary switch located toward the outside of the disk. This switch has four positions. Rotating the switch fully counter clockwise will put the coil in the 0 mil /Siemens per meter position. Rotating the switch clockwise the following positions will be the 90 mil /Siemens, 450 mil / Siemens and the 1700 mil / Siemens per meter.

Specifications

Power Requirements

None

Calibration Ranges or Scales per meter.

0mS/m, 90mS/m, 450mS/m, 1700mS/m

These values are approximate as each coil has slightly different values.

Length

60.32cm assembled

Diameter

60.96 cm

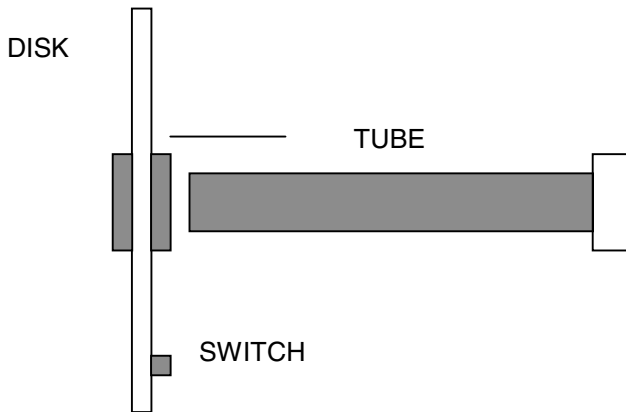
Weight

2 kg approx.

Installation

Installing the 4EMD-1000

Installation of the 4EMD-1000 requires that you take the gray cylindrical tube and screw the threaded end of the tube into the disk from the rotary switch side. Ensure the tube is screwed into the disk until the end of the tube is flush with the bottom of the disk.



Operating Procedure

Operation

To utilize the calibration coil, first assemble the unit as described in the previous procedure. Follow the instructions in the manual for the probe for connecting to the logging cable, choosing ranges to log with and powering the probe. Ensure the weight section is removed from the probe and the small black tip provided with the probe is installed on the bottom of the probe. Hold the probe in the air as described in the probe manual to get a zero calibration reading from the probe. Now choose a corresponding calibration setting with the rotary switch on the 4EMD-1000 coil, with the range selection chosen for the probe. Slide the calibration coil over the end of the probe until the probe reaches the end of the tube and hold in the air as described in the calibration procedures in the manual. Use the numbers stamped on the calibration coil for calibration points to be entered in the probe driver. Follow normal procedures for saving these values in your probe driver.

Performance Checks and Calibrations

The instrument is set to read correctly at the factory and is not necessary to check the instrument before calibrating the probe.

Preventive Maintenance

The 4EMD-1000 probe should provide long life with no maintenance. Keep unit dry.

Troubleshooting

Problems with the Coil

In the event the coil develops a problem, follow the troubleshooting procedure listed below.

No change in data from probe when switch is set to calibration point.

1. Is the probe running in the correct range?
2. If step 1 is confirmed remove coil and place a metal object close to the probe.
3. If probe responds to step 2, ensure correct calibration setting on coil in being used.
4. If step 3 is confirmed, the coil switch or coil may be at fault.

Disassembly Instructions

The 4EMD-1000 Calibration Coil should only be disassembled where the tube is installed into the disk. Any further disassembly should be performed by Mount Sopris, or a qualified technician.

Appendix

Suggested QA Procedure

General notes for Quality Assurance are presented here for users who need to utilize these techniques when collecting data. These users will need to periodically calibrate their equipment using equipment whose calibration is traceable to an approved standard. Details of these calibrations must be recorded.

When an instrument is calibrated, records need to be kept regarding the calibration standard(s) used and what was changed on the instrument to calibrate it. Typically, the corrections made to the instrument involve changing constants that are used to scale the raw instrument reading so that the proper value is reported. The constants must be recorded during a calibration procedure. The Mt. Sopris family of Acquire programs records the calibration constants that were used to acquire the data. This aids the QA process, but does not replace the need for recording these constants at the time of calibration. The reason for this is that the length of time since the last calibration is unknown with only this information.

The device providing the standard must be traceable to an accepted standard. Examples of organizations providing standards for measuring instrumentation are: The U. S. National Bureau of Standards; The American Petroleum Institute; and the American Society for Testing Materials. For example, if the voltmeter or the density standard used for calibration is not traceable to an approved organization, such as those listed above, the calibration should not be considered valid. Records should be kept indicating the last time that standard being used for calibration was calibrated or checked against an approved standard. The QA procedure necessary for some programs mandate that the calibration standards be periodically checked against a standard approved by a proper agency.

A QA procedure may dictate that data taken from a given locale be associated with records indicating the exact time and location that the data was collected. The data itself may have to be collected in a certain format to meet requirements. Often, QA procedure specifies that surveys must be repeated and the data from the successive surveys compared. This technique is used to eliminate poor or invalid data.